We claim:

1. An embossable film comprising:

a base layer;

an embossable layer on a surface of the base layer; and

a high reflective index layer on a surface of the embossable layer, wherein the embossable film is directly embossable.

2. The embossable film of claim 1, wherein the base layer comprises polyethyleneterephthalate.

3. The embossable film of claim 1, wherein the embossable layer comprises a non-crosslinked polystyrene-acrylic or a non-crosslinked polyester.

4. The embossable layer of claim 1, wherein the embossable layer comprises a resin having a Tg of greater than 20° C and less than 70 °C.

5. The embossable film of claim 1, wherein the base layer has a thickness of 4.5 μm to 150 μm.

6. The embossable film of claim 1, wherein the embossable layer has a thickness of 0.1 μm to 2.0 μm.

7. The embossable film of claim 1, wherein the transparent high reflective index layer comprises ZnS, Sb_2S_3, Fe_2O_3, PbO, ZnSe, CdS, TiO_2, $PbCl_2$, CeO_2, Ta_2O_5, ZnO, CdO or Nd_2O_3.

8. The embossable film of claim 1, wherein the transparent high reflective index layer has a thickness of 50 Angstroms to 1500 Angstroms.

9. The embossable film of claim 1, wherein the transparent high reflective index layer is applied using a physical vapor deposition process.

10. A method of producing a diffraction grating comprising:

providing a substrate film with an embossable layer;

applying a transparent high reflective index layer on top of the embossable layer; and

embossing the film to create a diffraction grating.

11. The method of claim 10, wherein the base layer comprises polyethyleneterephtalate.

12. The method of claim 10, wherein the embossable layer comprises a non-crosslinked polystyrene-acrylic or a non-crosslinked polyester.

13. The method of claim 10, wherein the embossable layer comprises a resin having a Tg of greater than 20° C and less than 70 °C.

14. The method of claim 10, wherein the base layer has a thickness of 4.5 μm to 150 μm.

15. The method of claim 10, wherein the embossable layer has a thickness of 0.1 μm to 2.0 μm.

16. The method of claim 10, wherein the transparent high reflective index layer comprises ZnS, Sb_2S_3, Fe_2O_3, PbO, ZnSe, CdS, TiO_2, $PbCl_2$, CeO_2, Ta_2O_5, ZnO, CdO or Nd_2O_3.

17. The method of claim 10, wherein the transparent high reflective index layer has a thickness of 50 Angstroms to 1500 Angstroms.

18. The method of claim 10, wherein the transparent high reflective index layer is applied using a physical vapor deposition process.

19. A method of producing a directly embossable film comprising:

providing a polyethyleneterephthalate film;

stretching the polyethyleneterephthalate film to form a uniaxially oriented polyethyleneterephthalate film;

coating at least one surface of the uniaxially oriented polyethyleneterephthalate film with an aqueous solution of an organic material to form an embossable layer;

transverse stretching the coated uniaxially oriented polyethyleneterephthalate film; and

applying a transparent high reflective index coating to embossable layer of the polyethyleneterephthalate film to form a directly embossable film.

20. The method of claim 19, wherein the aqueous solution comprises a non-crosslinked polystyrene-acrylic or a non-crosslinked polyester.

21. The method of claim 19, wherein the aqueous solution comprises a resin having a Tg of greater than 20° C and less than 70 °C.

22. The method of claim 19, wherein the base layer has a thickness of 4.5 μm to 150 μm.

24. The method of claim 19, wherein the embossable layer has a thickness of 0.1 μm to 2.0 μm.

25. The method of claim 19, wherein the transparent high reflective index layer comprises ZnS, Sb_2S_3, Fe_2O_3, PbO, ZnSe, CdS, TiO_2, $PbCl_2$, CeO_2, Ta_2O_5, ZnO, CdO or Nd_2O_3.

26. The method of claim 19, wherein the transparent high reflective index layer has a thickness of 50 Angstroms to 1500 Angstroms.

27. The method of claim 19, wherein the transparent high reflective index layer is applied using a physical vapor deposition process.